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09/911,663	07/24/2001	John Edward Ciolfi	04899-060001	3836

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EXAMINER	
PILLAI, NAMITHA	

ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/911,663	CIOLFI, JOHN EDWARD	
	Examiner	Art Unit	
	Namitha Pillai	2173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-24 and 26-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-24 and 26-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The Examiner acknowledges Applicant's submission on 6/12/06 including amendments to claims 16, 17, 19, 28, 33, 40, 45 and 46 and the cancellation of claim 25. All pending claims have been rejected as being disclosed in or obvious over prior arts.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 33-44 and 46 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by U. S. Patent No. 6, 937, 257 B1 (Dunlavey).

As per claims 33 (method) and 46 (readable medium), Dunlavey discloses the inventions substantially as claimed above. Dunlavey discloses the limitations of receiving a plurality of user-defined block parameters (column 9, lines 55-67), teaching that Dunlavey allows for multiple variables to be defined by the user. Dunlavey also discloses processing the plurality of user-defined block parameters to produce a plurality of run-time block parameters (column 3, lines 1-8), with the parameters defined for the blocks by the user is optimized with its proper unit data to create an internal representation of the user defined block parameter, creating the run-time block

parameter for modeling the graphical block diagram. All parameters that are defined by the user for all components of the graphical block diagram have a representative run-time optimized parameter that is created when the internal representation of the graphical block diagram is generated. Dunlavey also teaches the grouping or pooling together of like non-interfaced run-time block parameters to create a run-time parameter expression for use during modeling, wherein Figure 4 lists the expression "SetDiscrete" which includes a group of run-time block parameters that are grouped and share a commonality of belonging to this group. Figure 4 is further taught to represent run-time parameters and expressions as it is an internal representation (column 17, lines 63-65). Dunlavey discloses multidimensional data types that represent various like variables, which are then reused in relation to expressions and statements (column 3, lines 3-11).

As per claim 34, Dunlavey discloses mapping user defined block parameters into an existing pool (column 7, lines 55-67), where user-defined parameters are received and considered part of an existing pool to be evaluated on a periodic basis.

As per claim 35, Dunlavey discloses that the non-interfaced run-time block parameters have stored values that differ from presented values (see col. 3, lines 1-7), where a conversion process occurs from the presented value to the run-time parameters.

As per claim 36, Dunlavey discloses that the non-interfaced run-time block parameters are fixed point, where Figure 4 teaches "NamedConst" which is a representation of a run-time block parameter that is fixed point.

As per claim 37, Dunlavey discloses translating at run-time constant parameter values to an internal representation to enable increased pooling, where Figure 4 teaches a translated run-time parameter value that is an internal representation of "Unit" which is used multiple times as needed for using units, thereby enabling increased pooling (column 16, lines 38-45).

As per claim 38, Dunlavey discloses collecting constant portions of an expression containing an interfaced variable (column 24, lines 35-45), wherein discloses collecting the constant portions of an expression, as previous expressions that are calculated to a constant value and this constant value further used in an expression containing an interfaced variable, thereby teaching collecting the constant portions of an expression.

As per claim 39, Dunlavey discloses that the run-time block parameter is configured to return simulations results and automatically generated code that implements graphical block diagram model equations (column 19, lines 25-65).

As per claim 40, Dunlavey discloses that the code is automatically generated, the parameter expressions are maintained in the automatically generated code (column 19, lines 42-55).

As per claim 41, Dunlavey discloses that the parameter expressions contain interfaced variables that are updatable during modeling (column 25, lines 40-47).

As per claim 42, Dunlavey discloses converting to a relatively more compact representation portions of the parameter expressions that are constants while providing access to interface variables that are updatable (column 10, lines 45-50 and column 25, lines 40-50), where assignment expressions teaching assigning of a constant value to a

variable and differential equation allows for manipulation of values with changes reflected in the graphs as the user updates the parameters.

As per claim 43, Dunlavey discloses that interfaced variables are updatable (column 25, lines 40-50).

As per claim 44, Dunlavey discloses that the updatable variables used in a plurality of blocks are declared only once (column 19, lines 57-64), wherein teaching the use of global variables which are variables that are declared once and is used in a plurality of blocks or functions.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 16-24, 26-32 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunlavey and U. S. Patent No. 5, 475, 851 (Kodosky et al.), herein referred to as Kodosky.

As per claims 16 (method) and 45 (readable medium), Dunlavey discloses a method of mapping graphical block diagram block parameters in a graphical block diagram modeling environment (see col. 9, lines 55-60), where these variables are mapped into graphical block diagram for functions represented by the blocks of the diagram. These parameters represent a value that is to be used during block diagram execution, the parameters being used in the expressions that are executed as part of

the block diagram (column 9, lines 47-60). Dunlavey discloses receiving a user-defined block parameter (see col. 9, lines 55-60) where the graphical block functions receive the parameters that are defined by the user. Dunlavey discloses processing the user-defined block parameter to produce a run-time block parameter for use during modeling (column 3, lines 1-8), with the parameters defined for the blocks by the user is optimized with its proper unit data to create an internal representation of the user defined block parameter, creating the run-time block parameter for modeling the graphical block diagram. Although Dunlavey does disclose grouping of parameters and the use of global variables, Dunlavey does not clearly disclose that run-time block parameters reduce memory requirements for executing a block diagram. Kodosky discloses using global parameters in a graphical block diagram that is compiled and then executed, thereby the parameters representing run-time block parameters (column 1, lines 28-32). Kodosky further teaches that the use of global parameters reduces memory requirements when executing the block diagram (column 59, lines 1-15), thereby teaching a motivation for the user of global variables. It would have been obvious to one skilled in the art, at the time of the invention to learn from Kodosky to use run-time block parameters that reduce memory requirements for executing block diagrams. Both Kodosky and Dunlavey disclose generating graphical block diagrams using parameters that are to be executed. Kodosky further teaches that the use of global variables reduces memory requirements for execution of the block diagram, with the storage and execution process becoming more efficient (column 59, lines 1-15). Therefore, one skilled in the art, at the time of the invention would have been motivated to learn from

Kodosky to use run-time block parameters that reduces memory requirements for executing a block diagram.

As per claim 17, Dunlavey discloses a block method that inversely links or maps the block run-time parameter to the user-defined block parameter (column 9, lines 7-12), where the functions teach inverse linking of the run-time parameter to the user-defined parameter.

As per claim 18, Dunlavey discloses the limitations of receiving a plurality of user-defined block parameters (column 9, lines 55-67), teaching that Dunlavey allows for multiple variables to be defined by the user.

As per claim 19, Dunlavey also discloses processing the plurality of user-defined block parameter to produce a run-time block parameter (column 3, lines 1-8), with the parameters defined for the blocks by the user is optimized with its proper unit data to create an internal representation of the user defined block parameter, creating the run-time block parameter for modeling the graphical block diagram.

As per claim 20, Dunlavey also discloses processing the plurality of user-defined block parameter to optimally produce a single run-time block parameters (column 3, lines 1-8), with the parameters defined for the blocks by the user is optimized with its proper unit data to create an internal representation of the user defined block parameter, creating the run-time block parameter for modeling the graphical block diagram.

As per claim 21 and 27, Dunlavey discloses that the run-time block parameter is configured to return simulations results and automatically generated code that implements graphical block diagram model equations (column 19, lines 25-65).

As per claim 22, Dunlavey discloses mapping by discarding at least a portion of the plurality of user-defined block parameters to reduce memory requirements (column 22, lines 45-55), where Dunlavey teaches only regarding distinct parameters within a set of parameters, and thereby discarding at least a portion of the parameters, and wherein the simulation requiring memory is reduced where the simulation only occurs for the certain parameters that are not discarded.

As per claim 23, Dunlavey also teaches the grouping or pooling together of like non-interfaced run-time block parameters to create a run-time parameter expression for use during modeling, wherein Figure 4 lists the expression “SetDiscrete” which includes a group of run-time block parameters that are grouped and share a commonality of belonging to this group. Figure 4 is further taught to represent run-time parameters and expressions as it is an internal representation (column 17, lines 63-65). The reference to “SetDiscrete” allows for referencing a set of parameters, which would reduce repetition of all variables contained within that category or set.

As per claim 24, Dunlavey discloses mapping user defined block parameters into an existing pool (column 7, lines 55-67), where user-defined parameters are received and considered part of an existing pool to be evaluated on a periodic basis.

As per claim 26, Dunlavey discloses mapping by translating the plurality of user-defined block parameters based at least in part on type (column 11, lines 10-16).

As per claim 28, Dunlavey discloses that the code is automatically generated, the parameter expressions are maintained in the automatically generated code (column 19, lines 42-55).

As per claim 29, Dunlavey discloses that the parameter expressions contain interfaced variables that are updatable during modeling (column 25, lines 40-47).

As per claim 30, Dunlavey discloses converting to a relatively more compact representation portions of the parameter expressions that are constants while providing access to interface variables that are updatable (column 10, lines 45-50 and column 25, lines 40-50), where assignment expressions teaching assigning of a constant value to a variable and differential equation allows for manipulation of values with changes reflected in the graphs as the user updates the parameters.

As per claim 31, Dunlavey discloses that interfaced variables are updatable (column 25, lines 40-50).

As per claim 32, Dunlavey discloses that the updatable variables used in a plurality of blocks are declared only once (column 19, lines 57-64), wherein teaching the use of global variables which are variables that are declared once and is used in a plurality of blocks or functions.

Response to Arguments

4. Applicant's arguments filed 6/12/06 have been fully considered but they are not persuasive.

A run-time block parameter is represented as any parameter that is used in the graphical model. The parameters in this graphical model at run-time would serve as the

run-time block parameters of a graphical model. Therefore, any parameters in Dunlavey that is implemented into the graphical model that will be compiled and executed, will generate run-time block parameter version of the parameters that are initially implemented into the graphical model. Any of the parameters that are in the initially created graphical model will go through a processing step in which the same graphical model is run to create machine code which will result in run-time parameter version of the same parameters initially implemented into the graphical model. Dunlavey may teach the additional features of tracking the units in the graphical model, but Dunlavey also teaches the main features of the graphical model of implementing parameters, creating run-time parameter version of these parameters and even grouping of like parameters. Furthermore, although Dunlavey may not explicitly disclose using parameters to reduce memory requirements, Kodosky teaches using parameters in a graphical model that is to be executed and how the use of these parameters reduces memory requirements making the process more efficient by saving storage space.

Dunlavey does disclose examples of when like parameters are grouped or pooled together (column 24, lines 35-45). Dunlavey also discloses multivariate distribution blocks, which hold like parameters. The variables are reused within various expressions, the distribution block being reused multiple times (column 3, lines 8-11).

The automatically generated code, in whichever format is generated as a result of compilation of the expressions. Therefore, the automatically generated code does

maintain the expressions, where the code is a compiled version of the expression, thus maintaining the expression in order to carry out the intended functionality.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action. Responses to this action should be submitted as per the options cited below: The United States Patent and Trademark Office requires most patent related correspondence to be: a) faxed to the Central Fax number (571-273-8300) b) hand carried or delivered to the Customer Service Window (located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314), c) mailed to the mailing address set forth in 37 CFR 1.1 (e.g., P.O. Box 1450, Alexandria, VA 22313-1450), or d) transmitted to the Office using the Office's Electronic Filing System. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Namitha Pillai whose telephone number is

(571) 272-4054. The examiner can normally be reached on 8:30 AM - 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kristine Kincaid can be reached on (571) 272-4063.

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Namitha Pillai
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Art Unit 2173
August 31, 2006

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